Application No. 10/748,159
Reply to Office Action of June 19, 2006
OCT 1 9 2006
Please amend the plaims as a plows:
Claims 1-35 (Canceled).

Claim 36 (Currently Amended): [[The]] A semiconductor laser device according to elaim 34, comprising:

a first stripe structure that has a first active layer grown on a first portion of a semiconductor substrate and a first diffraction grating formed in a vicinity of the first active layer, said first stripe structure configured to emit a first laser beam having a plurality of oscillation longitudinal modes with a first center wavelength selected by the first diffraction grating; and

a second stripe structure that has a second active layer grown on a second portion of
the semiconductor substrate and a second diffraction grating formed in a vicinity of the
second active layer, said second stripe structure configured to emit a second laser beam
having a plurality of oscillation longitudinal modes with a second center wavelength selected
by the second diffraction grating, wherein

the first center wavelength differs from the second center wavelength, and wherein an oscillation wavelength spectrum formed by the oscillation longitudinal modes belonging to the first laser beam and an oscillation wavelength spectrum formed by the oscillation longitudinal modes belonging to the second laser beam do not cross each other in a range in which the intensity difference with respect to a peak power is not more than 3 dB.

Claim 37 (Currently Amended): [[The]] A semiconductor laser device according to elaim 34, comprising:

a first stripe structure that has a first active layer grown on a first portion of a semiconductor substrate and a first diffraction grating formed in a vicinity of the first active layer, said first stripe structure configured to emit a first laser beam having a plurality of oscillation longitudinal modes with a first center wavelength selected by the first diffraction grating; and

a second stripe structure that has a second active layer grown on a second portion of
the semiconductor substrate and a second diffraction grating formed in a vicinity of the
second active layer, said second stripe structure configured to emit a second laser beam
having a plurality of oscillation longitudinal modes with a second center wavelength selected
by the second diffraction grating, wherein

the first center wavelength differs from the second center wavelength, and wherein the second center wavelength is shorter than the first center wavelength, and a frequency difference between the oscillation longitudinal mode having a minimum wavelength among the oscillation longitudinal modes of intensity not more than 10 dB below a peak power in the first laser beam and the oscillation longitudinal mode having a maximum wavelength among the oscillation longitudinal modes of intensity not more than 10 dB below a peak power in the second laser beam is greater than an electrical frequency bandwidth of an optical transmission system being used.

Claims 38-42 (Canceled).

Claim 43 (Previously Presented): A semiconductor laser device comprising:

a first stripe structure that has a first active layer grown on a first portion of a
semiconductor substrate, said first stripe structure configured to emit a first laser beam having
a plurality of oscillation longitudinal modes; and

a second stripe structure that has a second active layer grown on a second portion of the semiconductor substrate, said second stripe structure configured to emit a second laser beam having a plurality of oscillation longitudinal modes, wherein

a wavelength difference between all the oscillation longitudinal modes of intensity not more than 3 dB below a peak power of the first laser beam and all the oscillation longitudinal modes of intensity not more than 3 dB below a peak power of the second laser beam is not less than 0.01 nm.

Claim 44 (Previously Presented): The semiconductor laser device according to claim 43, wherein the wavelength difference is not less than 0.1 nm.

Claims 45-54 (Canceled).

Claim 55 (Previously Presented): A semiconductor laser module comprising: a semiconductor laser device including

a first stripe structure that has a first active layer grown on a first portion of a semiconductor substrate, said first stripe structure configured to emit a first laser beam having a plurality of oscillation longitudinal modes; and

a second stripe structure that has a second active layer grown on a second portion of the semiconductor substrate, said second stripe structure configured to emit a second laser beam having a plurality of oscillation longitudinal modes, wherein a wavelength difference between all the oscillation longitudinal modes of intensity not more than 3 dB below a peak power of the first laser beam and all the oscillation longitudinal modes of intensity not more than 3 dB below a peak power of the second laser beam is not less than 0.01 nm;

a first lens on which the first laser beam and the second laser beam are

incident;

a polarization rotating unit on which either of the first laser beam and the second laser

beam emerging from the first lens is incident, said polarization rotating unit being configured

to rotate the polarization plane of the incident laser beam by a predetermined angle;

a polarization-combining unit including a first port on which the first laser beam

emerging from either of the first lens and the polarization rotating unit is incident, a second

port on which the second laser beam emerging from either of the polarization rotating unit

and the first lens is incident, and a third port from which the first laser beam and the second

laser beam emerge as a combined laser beam; and

an optical fiber that receives the combined laser beam emerging from the third port of

the polarization-combining unit, and transmits the combined laser beam to outside.

Claim 56 (Previously Presented): The semiconductor module according to claim 55,

wherein the first lens is a single lens configured to separate the first laser beam and the

second laser beam so as to widen a distance therebetween.

Claims 57-61 (Canceled).

Claim 62 (Previously Presented): An optical fiber amplifier comprising:

a pump light source generating a pump light of reduced degree of polarization by

polarization combining a first laser beam and a second laser beam emitted from a

semiconductor laser device, said semiconductor laser device including

5

Application No. 10/748,159 Reply to Office Action of June 19, 2006

a first stripe structure that has a first active layer grown on a first portion of a semiconductor substrate, said first stripe structure configured to emit the first laser beam having a plurality of oscillation longitudinal modes; and

a second stripe structure that has a second active layer grown on a second portion of the semiconductor substrate, said second stripe structure configured to emit the second laser beam having a plurality of oscillation longitudinal modes, wherein a wavelength difference between all the oscillation longitudinal modes of intensity not more than 3 dB below a peak power of the first laser beam and all the oscillation longitudinal modes of intensity not more than 3 dB below a peak power of the second laser beam is not less than 0.01 nm;

an optical coupler that couples a signal light with the pump light; and an amplification optical fiber that amplifies the signal light based on a Raman amplification.